

22582

UNCLASSIFIED

11 May 1978

MEMORANDUM FOR THE RECORD

SUBJECT: US-USSR GNP Comparisons

The attached memorandum and Table were forwarded to  
Colonel L.D. Badgett, USAF Academy, Colorado, per his request.

Attachments:  
as stated

D

UNCLASSIFIED

UNCLASSIFIED

12 May 1978

MEMORANDUM FOR THE RECORD

SUBJECT: US-USSR GNP Comparisons

1. The burden of defense cannot be measured from US-USSR GNP comparisons in dollars. Defense burden is correctly measured by calculating the defense share of GNP when both defense and GNP are stated in domestic prices. In the USSR, defense burden must be defined within the context of Soviet GNP in ruble prices. This calculation shows a greater burden for the USSR than the US, i.e., 11-13% for the USSR vs 5% for the US.

2. US-USSR dollar comparisons of GNP and defense will never give accurate indications of defense burden. The methodology behind the comparisons makes this impossible.

a. Our estimates of Soviet defense spending in dollars measure the cost of producing the Soviet defense effort in the US based on US resource costs, scarcities and transformation rates. These, of course, have no relevance for the USSR.

b. The dollar figure that shows Soviet GNP to be half of US GNP is the geometric average of ruble and dollar GNP comparisons. Ruble and dollar comparisons yield different but equally valid results. The dollar comparison measures the relative ability of the two countries to produce the Soviet mix of output; ruble comparisons measure relative ability to produce US output. The geometric average is an approximate measure of relative ability to produce a mix of output that lies between the actual output mixes.

3. Ruble and dollar comparisons yield very different results because the patterns of output and prices vary greatly between the US and the USSR. Dollar prices place greater weight on output of investment and defense in which the USSR specializes; ruble prices place greater weight on consumer

ER M 78-10321

UNCLASSIFIED

UNCLASSIFIED

goods in which the US has an absolute and relative advantage. Underlying the comparisons is the assumption that each country could switch to the other's mix of output with no change in unit costs or prices. The dollar comparison assumes that the US could shift to the Soviet output mix with no change in the dollar value of GNP. Ruble comparisons assume the Soviets could shift to US output patterns with no change in ruble GNP. Because each country is better equipped to produce its own output mix, dollar comparisons favor the USSR while ruble comparisons favor the US. Soviet GNP is larger, relative to US GNP if the comparison is made in dollars. When a single, dollar figure for Soviet GNP is required we use the geometric average of ruble and dollar comparisons. In theory it provides a comparison less biased than either of the comparisons in national prices.



Attachment:  
as stated

UNCLASSIFIED

UNCLASSIFIED

## US and USSR: Comparisons of GNP

|      | <u>Billion 1955 Rubles</u> |           | <u>Billion 1976 Dollars</u> |           | <u>Soviet GNP Geometric Mean</u> |                        |
|------|----------------------------|-----------|-----------------------------|-----------|----------------------------------|------------------------|
|      | <u>USSR</u>                | <u>US</u> | <u>USSR</u>                 | <u>US</u> | <u>\$ billion 1976</u>           | <u>USSR as % of US</u> |
| 1960 | 177                        | 498       | 574                         | 986       | 448                              | 45                     |
| 1965 | 226                        | 624       | 755                         | 1240      | 582                              | 47                     |
| 1966 | 241                        | 660       | 798                         | 1313      | 618                              | 47                     |
| 1967 | 253                        | 669       | 835                         | 1349      | 653                              | 48                     |
| 1968 | 268                        | 699       | 882                         | 1408      | 690                              | 49                     |
| 1969 | 277                        | 720       | 912                         | 1444      | 712                              | 49                     |
| 1970 | 298                        | 719       | 978                         | 1440      | 764                              | 53                     |
| 1971 | 311                        | 746       | 1020                        | 1481      | 794                              | 54                     |
| 1972 | 317                        | 791       | 1044                        | 1568      | 810                              | 52                     |
| 1973 | 340                        | 843       | 1114                        | 1653      | 861                              | 52                     |
| 1974 | 354                        | 825       | 1163                        | 1630      | 902                              | 55                     |
| 1975 | 362                        | 814       | 1187                        | 1609      | 922                              | 57                     |
| 1976 | 377                        | 868       | 1245                        | 1706      | 960                              | 56                     |

UNCLASSIFIED